

Remarks

The Final Office Action mailed June 29, 2006 has been carefully considered, and Applicants' counsel offers the foregoing amendments to the claims and the following remarks. Claims 1-11, 13-21, and 23-24 have been amended to place the claims into condition for allowance, and claims 12, 22, and 25 have been canceled. Favorable reconsideration of the present application is respectfully requested.

Claims 1-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Wada et al. (U.S. 5,760,080) for the reasons set forth in item 5 of the Office Action mailed 1/4/06. In the Final Office Action, the Examiner opines that the claims of the present invention are not directed to a process of neutralizing a polymer, but rather to the polymer itself. Based on this, the Examiner concludes that the product-by-process limitations need not be found in a prior art reference, provided that the polymer limitations are met. This conclusion is incorrect because the cation of the neutralization agent reacts with the monomer and becomes part of the polymer, as is well known by those skilled in the art. The present claims are directed to a hydrophilic superabsorbent polymer composition that includes an absorbent polymer that is the reaction product of a monomer, an internal crosslinking agent, a first neutralizing agent, and a second neutralizing agent to form an absorbent polymer particle which is surface treated with a surface crosslinking agent.

Independent claims 1, 13, and 21 have been amended to clarify the present invention as being directed to a hydrophilic, superabsorbent polymer composition that includes an absorbent polymer that is the reaction product of a monomer, first neutralizing agent, second neutralizing agent, and internal crosslinking agent, wherein the absorbent polymer is formed into a particle

that is surface treated with a surface crosslinking agent to form a hydrophilic superabsorbent polymer composition having the properties set forth in the claims of the present invention.

It is well known and documented in the art of superabsorbent polymer that the cation of the neutralization agent generally becomes part of the polymer. For example, neutralization with sodium hydroxy results in a sodium polyacrylate. Hence, the neutralization agent directly reacts with the polymer to form a different polymer. In the present case, the cations of the first and second neutralizing agents are very reactive with the monomer, and neutralization of the polymer results as a property of the reaction. In view of this fact, the two neutralization agents directly affect the resulting polymer, and hence cannot be considered as product-by-process claims, as the Examiner has done. The Examiner is directed to the text "Modern Superabsorbent Polymer Technology" pages 20 to 22 attached hereto as Appendix A.

Examples 16 and 17 of Wada et al. are directed to superabsorbent polymer compositions that only refer to the use of sodium acrylate (neutralization rate of 65 mole %) in Example 16 and a neutralization rate of 75 mole % in Example 17. Example 18 of Wada et al. includes sodium carbonate as the neutralizing agent. Wada et al. fails to disclose or suggest a polymer that is the reaction product of an internal crosslinking agent, a first neutralizing agent selected from monovalent hydroxides, monovalent carbonate, or monovalent bicarbonate salts, or mixtures thereof, and a second neutralizing agent comprising a multivalent metal hydroxide as set forth in the present claims. In addition, the Examiner's attention is directed to the use of term sodium acrylate as showing that the polymer is the result of the reaction of a monomer and neutralizing agent. Therefore, Applicants respectfully contend that the Examiner's rejection of Claims 1-25 under 35 U.S.C. 102(b) is moot, and this rejection should be withdrawn.

In Paragraph 2 of the Final Office Action, Claims 1-25 are rejected under 35 U.S.C. 102(b) as anticipated by Carrico et al. (WO 98/52979) for the reasons set forth in item 6 of the Office Action mailed 1/4/06. In Item 6 of the Office Action mailed 1/4/06, the Examiner states that Examples 1-3 disclose the making of superabsorbent polymer material comprising partially neutralized acrylic acid, internal crosslinking agent, and a surface crosslinking agent, wherein the polymer has greater than 38 g/g absorbency. According to the Examiner, the example states that the neutralization is optionally performed with a combination of two neutralizing agents (page 13, lines 17-20). For the reasons set forth below, Examples 1-3 fail to disclose the hydrophilic superabsorbent polymer composition as set forth in the current claims of the present invention.

Example 1 of Carrico et al. states in lines 17-20, “[p]olymer so obtained was neutralized to 60-95 mole percent (the postneutralization “PN” process) with any of sodium carbonate, potassium carbonate, ammonium carbonate, or mixtures.” The example further states that the polymer was neutralized with sodium carbonate powder to 75 mole percent. Example 1 fails to disclose the use and the amounts of the first and second neutralizing agents as set forth in the present invention.

Example 2 of Carrico et al. discloses neutralizing 75-80 mole percent of the acid in the solution with sodium carbonate, and Example 3 does not disclose neutralization. Examples 1-3 fail to disclose the use of two neutralization agents of the present invention as suggested by the Examiner.

In addition, Carrico et al., on page 4, line 25 to page 5, line 6, discloses provision of a method of manufacturing that lessens the process time and/or equipment capitalization costs that are required to manage exothermic neutralizations such as with NaOH. Clearly by this,

Carrico et al. teaches away from the neutralizing agents of the present invention. Therefore, Applicants respectfully contend that the Examiner's rejection of Claims 1-25 under 35 U.S.C. 102(b) is moot, and this rejection should be withdrawn.

Furthermore, the applicants have shown in the Affidavit of Dr. Smith, Appendix B hereto, that superabsorbent polymeric compositions C1 - C4 neutralized with one neutralization agent, internally crosslinked and surface crosslinked, do not possess the properties of the present invention. In particular, when compared to the present invention, the superabsorbent polymeric compositions C1-C4 do not meet at least one of: the measured absorption time, drop penetration, or Floatability. Examples C1-C4 in the Affidavit show that similar superabsorbent polymeric materials neutralized with one neutralization agent do not have the same properties as superabsorbent polymeric materials neutralized with two neutralization agents of the present invention.

In view of the forgoing amendments to the claims, remarks and the Affidavit by Dr. Scott Smith, allowance of Claims 1-11, 13-21, and 23-24 is respectfully requested. If any issues remain unresolved, applicant would welcome the opportunity for a telephone interview to expedite allowance and issue.

Respectfully submitted,

/Philip P. McCann/

Philip P. McCann
Registration No. 30,919
SMITH MOORE LLP
P.O. Box 21927
Greensboro, NC 27420
(336) 378-5302

Date: August 28, 2006

File No.: 5003073.045US1